



9.36 Township of Rockaway

This section presents the jurisdictional annex for the Township of Rockaway.

9.36.1 Hazard Mitigation Plan Point of Contact

The following individuals have been identified as the hazard mitigation plan's primary and alternate points of contact.

Primary Point of Contact	Alternate Point of Contact
Name: Vincent Brennan Address: 65 Mt. Hope Road, Rockaway, NJ 07866 Phone: (973) 625-4000 ext. 1063 E-mail: vbrennan063@rktpd.org	Martin McParland 65 Mt. Hope Road, Rockaway, NJ 07866 (973) 625-4000 ext. 1053 mmcparland053@rktpd.org

9.36.2 Municipal Profile

Rockaway Township was incorporated as a township by an Act of the New Jersey Legislature on April 8, 1844, from portions of Hanover Township and Pequannock Township. Portions of the township were taken to form Rockaway Borough (June 19, 1894), Port Oram (June 26, 1895, now Wharton) and Denville Township (April 14, 1913). Rockaway Township is located in north-central Morris County. It is bordered to the north and west by Jefferson Township, to the southwest by Wharton, Randolph, and Dover, and to the east by Rockaway Borough, Denville, Boonton Township, and Kinnelon. Rockaway Township is additionally bordered to the northeast by the Passaic County municipality of West Milford. According to the U.S. Census, the Township has a total area of 45.546 square miles, of which 41.403 square miles is land and 4.143 square miles is water. According to the U.S. Census, the 2010 population for the Township of Rockaway was 24,156.

Growth/Development Trends

The following table summarizes recent residential/commercial development since 2010 to present and any known or anticipated major residential/commercial development and major infrastructure development that has been identified in the next five years within the municipality. Refer to the map in this annex which illustrates the hazard areas along with the location of potential new development.

Table 9.36-1. Growth and Development

Property or Development Name	Type (e.g. Res., Comm.)	# of Units / Structures	Location (address and/or Block & Lot)	Known Hazard Zone(s)	Description/Status of Development
Recent Development from 2010 to present					
North Jersey Media	Commercial	Solar Panels	Block 22401 Lot 3.04 100 Commons Way	Flood: 1% Chance	Solar Panels/Completed
Split Rock Reservoir	Commercial	1	Block 50001 Lot 1 & Block 310001 lot 12 Split Rock Road	None Known	Dam/Under Construction
Garcia/Garcia Associates, LLC	Commercial	1	Block 22105 Lot 2 85 Green Pond Rd.	None Known	Office Building/Completed
Buffalo Wild Wings	Commercial	1	Block 11001 Lot 9 343 Mt. Hope Ave.	None Known	Restaurant/Completed
31 Green Pond Rd. Assoc.	Residential	10 Units	Block 22102 Lot 6 31Green Pond Road	None Known	Residential/Multi-Family Approved/ Under Construction
Tomco	Commercial	1	Block 11501 Lots 31 thru 39	NEHRP: D; Karst	Commercial/Approved/ Under Construction



Property or Development Name	Type (e.g. Res., Comm.)	# of Units / Structures	Location (address and/or Block & Lot)	Known Hazard Zone(s)	Description/Status of Development
			212 Rt. 15 South	Hazard	
Habitat for Humanity	Residential	11 Units	Block 40801 Lot 83 1076 Green Pond Road	None Known	Residential/ Single Family/Under Construction
Five Guys Burger & Fries	Commercial	1	Block 11001 Lot 11.03 & 11.01 381 Mt. Hope Ave	None Known	Restaurant/Under Construction
Exxon Gas Station Mt. Pleasant Ave	Commercial	1	Block 11116 Lot 44 5 Mt. Pleasant Ave	None Known	Gas Station/Completed
Rockaway Township Golf Course- Recreation Fields	Commercial	2 Athletic Fields	Block 40701 Lot 93 764 Green Pond Road	None Known	Recreation/ Athletic Fields/Completed
Known or Anticipated Development in the Next Five (5) Years					
Stratton Woods	Residential	8 Single Family Dwellings	Block 10802 Lots 33 & 34 Mt. Pleasant Ave & Heather Ct.	None Known	Residential/Approved/ Not Constructed
Pondview Estates	Residential/Commercial	1	Block 11501 Lots 41, 45, & 47 Rt. 15 South	NEHRP: D; Karst Hazard	Residential/Commercial Outstanding Water Allocation
Morris Commons	Residential	362 Units	Block 22401 Lots 3.06 & 3.07 600 & 700 Commons Way	None Known	Residential/Multi-Family Outstanding Water Allocation
Lennar-Coventry Park	Residential	140 Units	Block 22401 Lot 1.01 Green Pond Road	None Known	Residential/Multi-Family Outstanding Water Allocation
Kruppa-Marriot Hotel	Commercial	1	Block 22103 Lot 8 14 Green Pond Road	NEHRP: D	Hotel/Not Constructed
First Hartford Realty Corp. CVS	Commercial	1	Block 10101 Lot 25 Rt. 46 East	None Known	Pharmacy/Approved/Not Constructed
JCP&L	Commercial	1	Block 11504 Lot 1 110 West Dewey Ave	NEHRP: D; Karst Hazard	Upgrade Electric Sub-Station/Pending Approvals
Monti Properties	Commercial	1	Block 11403 Lot 21 Mt. Hope Ave	None Known	Garden Center/Approved/ Not Constructed
Romo's Realty/Tiffany's Restaurant	Commercial	1	Block 11302 Lot 50.01 Mt Hope Ave	None Known	Restaurant/Approved/ Not Constructed
CJJ Sports, LLC	Commercial	3 Athletic Fields	Block 11504 Lot 2 West Dewey Ave	NEHRP: D; Karst Hazard	Soccer Fields/Approved/ Not Constructed
Green Acres-Fleetwood Parking Lot	Commercial	Parking Lot (s)	Block 11101 Lot 44 Fleetwood Dr.	None Known	Pending Approvals
Southard Salvage	Commercial	1	Valley Road	None Known	Salvage Yard/Pending Approvals

* Only location-specific hazard zones or vulnerabilities identified.



9.36.3 Natural Hazard Event History Specific to the Municipality

Morris County has a history of natural and non-natural hazard events as detailed in Volume I, Section 5.0 of this plan. A summary of historical events is provided in each of the hazard profiles and includes a chronology of events that have affected the County and its municipalities. For the purpose of this plan update, events that have occurred in the County from 2008 to present were summarized to indicate the range and impact of hazard events in the community. Information regarding specific damages is included, if available, based on reference material or local sources. This information is presented in the table below. For details of these and additional events, refer to Volume I, Section 5.0 of this plan.

Table 9.36-2. Hazard Event History

Dates of Event	Event Type	FEMA Declaration # (If Applicable)	County Designated?	Summary of Damages/Losses
March 12 – April 15, 2010	Severe Storms and Flooding	DR-1897	Yes	Blackwell Street was closed. Debris removal and protective measures were costs incurred by the Township.
December 26-27, 2010	Severe Winter Storm and Snowstorm	DR-1954	Yes	The Municipal Building was converted into a charging station and warming center for residents. Utilities in the Township were out for approximately 24 hours. Overtime costs were incurred for snow removal.
August 26 – September 5, 2011	Hurricane Irene	EM-3332 DR-4021	Yes Yes	Power throughout the Township was out for up to 10 days. Various roads were closed for an extended time due to flooding and debris in the road. Debris removal and protective measures were costs incurred by the Township.
October 29, 2011	Severe Storm	DR-4048	Yes	The Municipal Building was converted into a charging station and warming center for residents. Utilities throughout the Township were out for varying lengths of time. The property at 221 Mount Pleasant Avenue experienced a partial roof collapse. Overtime costs were incurred for snow removal.
October 26 – November 8, 2012	Hurricane Sandy	EM-3354 DR-4086	Yes Yes	Points of Distribution for food and water were set up in multiple spots throughout the Township. Utilities in the Township were out for upwards of 14 days. A pumping station was damaged by wind and collapsed. Forced labor accounts were used for debris removal and protective measures.

9.36.4 Hazard Vulnerabilities and Ranking

The hazard profiles in Section 5.0 of this plan have detailed information regarding each plan participant's vulnerability to the identified hazards. The following summarizes the hazard vulnerabilities and their ranking in the Township of Rockaway. For additional vulnerability information relevant to this jurisdiction, refer to Section 5.0.

Hazard Risk/Vulnerability Risk Ranking

The table below summarizes the hazard risk/vulnerability rankings of potential hazards for the Township of Rockaway.



Table 9.36-3. Hazard Risk/Vulnerability Risk Ranking

Hazard type	Estimate of Potential Dollar Losses to Structures Vulnerable to the Hazard ^{a, c}	Probability of Occurrence	Risk Ranking Score (Probability x Impact)	Hazard Ranking ^b
Drought	Damage estimate not available	Frequent	27	Medium
Dam Failure	Damage estimate not available	Occasional	24	Medium
Earthquake	500-year MRP: \$2,535,942 2,500-year MRP: \$56,837,826	Occasional	24	Medium
Extreme Temperature	Damage estimate not available	Frequent	18	Medium
Flood	1% Annual Chance: \$6,246,737	Frequent	18	Medium
Geological Hazards	Exposed to Class A and Class B: \$11,320,133	Occasional	12	Low
Severe Storm	100-Year MRP: \$3,548,830 500-year MRP: \$19,023,380 Annualized: \$214,804	Frequent	48	High
Winter Storm	1% GBS: \$77,822,281 5% GBS: \$389,111,407	Frequent	54	High
Wildfire	Estimated Value Exposed to Extreme, Very High and High: \$90,707,266	Rare	6	Low
Disease Outbreak	Damage estimate not available	Frequent	36	High
Hazardous Materials	Damage estimate not available	Frequent	36	High
Infestation	Damage estimate not available	Frequent	18	Medium

Notes:

- a. Building damage ratio estimates based on FEMA 386-2 (August 2001)
- b. The valuation of general building stock and loss estimates was based on custom inventory for the municipality.
High = Total hazard priority risk ranking score of 31 and above
Medium = Total hazard priority risk ranking of 20-30+
Low = Total hazard risk ranking below 20
- c. Loss estimates for the severe storm and severe winter storm hazards are structural values only and do not include the value of contents.
- d. Loss estimates for the flood and earthquake hazards represent both structure and contents.
- e. The HAZUS-MH earthquake model results are reported by Census Tract.

National Flood Insurance Program (NFIP) Summary

The following table summarizes the NFIP statistics for the Township of Rockaway.

Table 9.36-4. NFIP Summary

Municipality	# Policies (1)	# Claims (Losses) (1)	Total Loss Payments (2)	# Rep. Loss Prop. (1)	# Severe Rep. Loss Prop. (1)	# Policies in 100-year Boundary (3)
Township of Rockaway	61	51	\$508,480.07	2	0	11

Source: FEMA Region 2, 2014

- (1) Policies, claims, repetitive loss and severe repetitive loss statistics provided by FEMA Region 2, and are current as of 9/30/2014. Please note the total number of repetitive loss properties includes the severe repetitive loss properties. The number of claims represents claims closed by 9/30/14.
- (2) Total building and content losses from the claims file provided by FEMA Region 2.
- (3) The policies inside and outside of the flood zones is based on the latitude and longitude provided by FEMA Region 2 in the policy file.

Notes: FEMA noted that where there is more than one entry for a property, there may be more than one policy in force or more than one GIS possibility.
A zero percentage denotes less than 1/100th percentage and not zero damages or vulnerability as may be the case.



Number of policies and claims and claims total exclude properties located outside County boundary, based on provided latitude and longitude.

Critical Facilities

The table below presents HAZUS-MH estimates of the damage and loss of use to critical facilities in the community as a result of a 1- and 0.2-percent annual chance flood events.

Table 9.36-5. Potential Flood Losses to Critical Facilities

Name	Type	Exposure		Potential Loss from 1% Flood Event		
		1% Event	0.2% Event	Percent Structure Damage	Percent Content Damage	Days to 100-Percent ⁽¹⁾
Agilent Techs Inc.	Hazardous Material	X	X	-	-	-
Hibernia Volunteer Fire Company 1	Fire		X	-	-	-
Lake Ames Dam	Dam	X	X	-	-	-
Mount Hope	Dam	X	X	-	-	-
White Meadow Lake Dam	Dam	X	X	-	-	-

Source: HAZUS-MH 2.1

Note (1): HAZUS-MH 2.1 provides a general indication of the maximum restoration time for 100% operations. Clearly, a great deal of effort is needed to quickly restore essential facilities to full functionality; therefore this will be an indication of the maximum downtime (HAZUS-MH 2.1 User Manual).

Note (2): In some cases, a facility may be located in the DFIRM flood hazard boundary; however HAZUS did not calculate potential loss. This may be because the depth of flooding does not amount to any damages to the structure according to the depth damage function used in HAZUS for that facility type. Further, HAZUS-MH may estimate potential damage to a facility that is outside the DFIRM because the model generated a depth grid beyond the DFIRM boundaries.

NA Not available

X Facility located within the DFIRM boundary

- Not calculated by HAZUS-MH 2.1

Other Vulnerabilities Identified

According to the 2010 preliminary FEMA Flood Insurance Study (FIS) for Morris County, the major portion of Rockaway Township is located within the Rockaway River drainage basin, which is a major tributary of the Morris Rivers. Flooding from the Rockaway River is usually associated with heavy rain from thunderstorms and hurricanes (FEMA FIS 2010).

9.36.5 Capability Assessment

This section identifies the following capabilities of the local jurisdiction:

- Planning and regulatory capability
- Administrative and technical capability
- Fiscal capability
- Community classification
- National Flood Insurance Program
- Integration of Mitigation Planning into Existing and Future Planning Mechanisms

Planning and Regulatory Capability

The table below summarizes the regulatory tools that are available to the Township of Rockaway.



Table 9.36-6. Planning and Regulatory Tools

Tool / Program (code, ordinance, plan)	Do you have this? (Yes/No) If Yes, date of adoption or update	Authority (local, county, state, federal)	Dept. /Agency Responsible	Code Citation and Comments (Code Chapter, name of plan, explanation of authority, etc.)
Planning Capability				
Master Plan	Yes/2006	Local	Planning	Periodic Re-Examination Report
Capital Improvements Plan	Yes/2014	Local	Admin	Capital Improvement Program
Floodplain Management / Basin Plan	Yes/1995	Local/State	Engineering	Local Ordinance Chapter 22
Stormwater Management Plan	Yes/2006	Local	Engineering	Local Ordinance Chapter 25
Open Space Plan	Yes/2013	Local	Community Services	Open Space and Recreation Plan
Stream Corridor Management Plan	Yes/1995	Local/State	Engineering	Local Ordinance Chapter 54 – 54- 30.10k Stream Encroachment
Watershed Management or Protection Plan	Yes/2004	Local/State	Planning	Highlands Regional Master Plan
Economic Development Plan	No	Local	-	-
Comprehensive Emergency Management Plan	Yes/2012	Local	OEM	Emergency Management Plan and Annex
Emergency Response Plan	Yes/2012	Local	OEM	Emergency Management Plan and Annex
Post-Disaster Recovery Plan	No	Local/County	OEM	Emergency Management
Transportation Plan	Yes	State	DOT	
Strategic Recovery Planning Report	No			
Other Plans:	No			
Regulatory Capability				
Building Code	Yes	State & Local		State Uniform Construction Code Act (N.J.S. 52:27D-119 et seq.)
Zoning Ordinance	Yes	Local	Planning	:Local Ordinance 54-30 – Zoning Regulations
Subdivision Ordinance	Yes	Local	Planning	Local Ordinance 54-21 – Site Plan and Sub Division Review Procedures
NFIP Flood Damage Prevention Ordinance	Yes	Federal, State, Local	Engineering	Local Ordinance Chapter 22
NFIP: Cumulative Substantial Damages	No			
NFIP: Freeboard	Yes	State, Local		
Growth Management Ordinances	Yes	Local/State	Planning	Highlands Regional Master Plan
Site Plan Review Requirements	Yes	Local	Planning	Local Ordinance 54-21
Stormwater Management Ordinance	Yes/2006	Local	Engineering	Chapter 25
Municipal Separate Storm Sewer System (MS4)	Yes/2009	Local/State	Engineering	Tiera Municipal Storm Water Generation Permit
Natural Hazard Ordinance	Yes/1995	Local	Engineering	Chapter 54-30.10 – Environmental Protection
Post-Disaster Recovery Ordinance	No			



Tool / Program (code, ordinance, plan)	Do you have this? (Yes/No) If Yes, date of adoption or update	Authority (local, county, state, federal)	Dept. /Agency Responsible	Code Citation and Comments (Code Chapter, name of plan, explanation of authority, etc.)
Real Estate Disclosure Requirement	Yes	State	Division of Consumer Affairs	N.J.A.C. 13:45A-29.1
Other [Special Purpose Ordinances (i.e., sensitive areas, steep slope)]	Yes/1995	Local	Engineering	Chapter 54-30.10 – Environmental Protection

Administrative and Technical Capability

The table below summarizes potential staff and personnel resources available to the Township of Rockaway.

Table 9.36-7. Administrative and Technical Capabilities

Resources	Is this in place? (Yes or No)	Department/ Agency/Position
Administrative Capability		
Planning Board	Yes	Planning
Mitigation Planning Committee	Yes	OEM
Environmental Board/Commission	Yes	Administration
Open Space Board/Committee	Yes	Administration
Economic Development Commission/Committee	Yes	Administration
Maintenance Programs to Reduce Risk	Yes	Administration
Mutual Aid Agreements	Yes	Police/Fire/OEM
Technical/Staffing Capability		
Planner(s) or Engineer(s) with knowledge of land development and land management practices	Yes	Engineering
Engineer(s) or Professional(s) trained in construction practices related to buildings and/or infrastructure	Yes	Engineering
Planners or engineers with an understanding of natural hazards	Yes	Engineering
NFIP Floodplain Administrator	Yes*	Engineering
Surveyor(s)	No	
Personnel skilled or trained in GIS and/or Hazus-MH applications	Yes	Planning
Scientist familiar with natural hazards	No	
Emergency Manager	Yes	OEM
Grant Writer(s)	No	
Staff with expertise or training in benefit/cost analysis	Yes	Finance
Professionals trained in conducting damage assessments	Yes	Construction

Fiscal Capability

The table below summarizes financial resources available to the Township of Rockaway.

**Table 9.36-8. Fiscal Capabilities**

Financial Resources	Accessible or Eligible to Use (Yes/No/Don't Know)
Community development Block Grants (CDBG, CDBG-DR)	Yes
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for specific purposes	Yes
User fees for water, sewer, gas or electric service	Yes
Impact Fees for homebuyers or developers of new development/homes	Yes
Stormwater Utility Fee	No
Incur debt through general obligation bonds	Yes
Incur debt through special tax bonds	Yes
Incur debt through private activity bonds	TBD
Withhold public expenditures in hazard-prone areas	TBD
Other Federal or State Funding Programs	Yes
Open Space Acquisition Funding Programs	Yes - Morris County Flood Mitigation Program (acquisitions)
Other	N/A

Community Classifications

The table below summarizes classifications for community program available to the Township of Rockaway.

Table 9.36-9. Community Classifications

Program	Do you have this? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Community Rating System (CRS)	No		
Building Code Effectiveness Grading Schedule (BCEGS)	No		
Public Protection (ISO Fire Protection Classes 1 to 10)	Yes	TBD	2012
Storm Ready	No		
Firewise	No		
Disaster/Safety Programs in/for Schools	Yes		2014
Organizations with Mitigation Focus (advocacy group, non-government)	No		
Public Education Program/Outreach (through website, social media)	Yes		2014
Public-Private Partnerships	Yes		2014

N/A = Not applicable. NP = Not participating. - = Unavailable. TBD = To be determined.

The classifications listed above relate to the community's ability to provide effective services to lessen its vulnerability to the hazards identified. These classifications can be viewed as a gauge of the community's capabilities in all phases of emergency management (preparedness, response, recovery and mitigation) and are used as an underwriting parameter for determining the costs of various forms of insurance. The CRS class applies to flood insurance while the BCEGS and Public Protection classifications apply to standard property insurance. CRS classifications range on a scale of 1 to 10 with class 1 being the best possible classification, and class 10 representing no classification benefit. Firewise classifications include a higher classification when



the subject property is located beyond 1000 feet of a creditable fire hydrant and is within 5 road miles of a recognized Fire Station.

Criteria for classification credits are outlined in the following documents:

- The Community Rating System Coordinators Manual
- The Building Code Effectiveness Grading Schedule
- The ISO Mitigation online ISO's Public Protection website at <http://www.isomitigation.com/ppc/0000/ppc0001.html>
- The National Weather Service Storm Ready website at <http://www.weather.gov/stormready/howto.htm>
- The National Firewise Communities website at <http://firewise.org/>

Self-Assessment of Capability

The table below provides an approximate measure of Rockaway's capability to work in a hazard-mitigation capacity and/or effectively implement hazard mitigation strategies to reduce hazard vulnerabilities.

Table 9.36-10. Self-Assessment Capability for the Municipality

Area	Degree of Hazard Mitigation Capability		
	Limited (If limited, what are your obstacles?)*	Moderate	High
Planning and Regulatory Capability			X
Administrative and Technical Capability			X
Fiscal Capability			X
Community Political Capability			X
Community Resiliency Capability			X
Capability to Integrate Mitigation into Municipal Processes and Activities.			X

National Flood Insurance Program

NFIP Floodplain Administrator

James Lutz, Municipal Engineer

Flood Vulnerability Summary

Rockaway Township joined the NFIP on November 15, 1979, and is currently an active member of the NFIP. The current effective Flood Insurance Rate Maps are dated September 18, 1986. The community's Flood Damage Prevention Ordinance (FDPO), found at Chapter 22 of the local code, was last updated on March 31, 1987.

As of September 30, 2014 there are 61 policies in force. Since September 30, 2014, 51 claims have been paid totaling \$508,480.07. As of September 30, 2014 there are 2 Repetitive Loss and no Severe Repetitive Loss properties in the community.

The municipality does not maintain a list of properties previously sustaining flood damage nor the interest in mitigation projects. Minimal damage was sustained in the Township following Hurricane Sandy. Two of the residential lake communities saw damage to properties. The municipal dam sustained damage. Throughout



the Township roads were closed due to flooding. Substantial Damage Estimates are completed in conjunction with the Office of Emergency Management. At this time, the Floodplain Administrator is unaware of any mitigation projects in the Township.

Resources

The community FDPO identifies the Construction Code Official as the local NFIP Floodplain Administrator, currently James Lutz, for which floodplain administration is an auxiliary duty. Additional staff is available to support the implementation of the Township's floodplain management program.

Duties and responsibilities of the NFIP Administrator are review of building permits, part of Land Use Board reviews, inspections upon completion of projects, and assist with damage assessments when necessary.

James Lutz feels he is adequately supported and trained to fulfill his responsibilities as the municipal floodplain administrator. At this time no barriers have been identified which inhibit the Township's ability to implement and run the floodplain management program effectively. James Lutz is not certified in floodplain management, however attends regular continuing education programs for code enforcement

The Township is currently working with the County to create a public education and outreach program focused on hazard mitigation and preparedness. A portion of this program will focus on floodplain management awareness.

Compliance History

The community is currently in good standing in the NFIP and has no outstanding compliance issues. The current NFIP Floodplain Administrator has no knowledge of when the last CAV was performed. The municipality sees no specific need for a CAV at this time.

Regulatory

The community's Flood Damage Prevention Ordinance (FDPO) was last updated on March 31, 1987, and is found at Chapter 22 of the local code.

Floodplain management regulations and ordinances meet FEMA and New Jersey State minimum requirements. Local ordinances and regulations used to exceed minimum requirements prior to recent regulatory changes at the State level. There are additional local ordinances, plans, and programs further supporting the implementation of the floodplain management program. The Township currently does not participate in the Community Rating System (CRS) program; however, the community is seeking to increase its floodplain management program by joining the CRS program.

Integration of Hazard Mitigation into Existing and Future Planning Mechanisms

For a community to succeed in reducing long-term risk, hazard mitigation must be integrated into the day-to-day local government operations. As part of this planning effort, each community was surveyed to obtain a better understanding of their community's progress in plan integration. A summary is provided below. In addition, the community identified specific integration activities that will be incorporated into municipal procedures.

Planning

Open Space Plan - Rockaway Township's Open Space Plan, last updated in 2013, contains a variety of initiatives related to open space, preserved land, land use/cover, and natural features. While the plan itself does



not specifically address mitigation, the goals in the document support mitigation initiatives. Such goals include:

- Preserve open space in locations most limited by environmental constraints and least appropriate for development, to create buffers and, where possible, greenways that protect existing natural resources and enable restoration of disturbed landscapes.
- Identify and acquire, where feasible, properties that can enlarge existing recreation...

The importance of acquiring and maintaining open space to the Township of Rockaway dovetails with flood mitigation initiatives delineated in this plan.

Master Plan - The Rockaway Township Master Plan contains many goals related to the preservation of natural resources and features which, subsequently, support mitigation initiatives. These goals strive to ensure sustainable development with a secondary effect of property protection. Specifically, the Master Plan recognizes the following goals:

- Ensure that any prospective development is responsive to the township's environmental features, and can be accommodated while preserving these features
- Encourage buffer zones to separate incompatible land uses

Regulatory and Enforcement

The Township continues to update and amend its local code as seen fit and with mitigation in mind.

Education and Outreach

In conjunction with the County, the Township is in the beginning stages of developing a public education and outreach program. The purpose of the program is to inform and disseminate information to the public regarding hazard mitigation and preparedness.



9.36.6 Mitigation Strategy and Prioritization

This section discusses past mitigations actions and status, describes proposed hazard mitigation initiatives, and prioritization.

Past Mitigation Initiative Status

The following table indicates progress on the community's mitigation strategy identified in the 2010 Plan. Actions that are carried forward as part of this plan update are included in the following subsection in its own table with prioritization. Previous actions that are now on-going programs and capabilities are indicated as such in the following table and may also be found under 'Capability Assessment' presented previously in this annex.

Table 9.36-11. Past Mitigation Initiative Status

Description	Status	Review Comments
Rockaway Twp 1: Backup power (generator) for School Facilities (shelter)(6)	No Progress	At this time, no funding source is available. The Rockaway Township Board of Education is still pursuing this project with assistance from the Township. This initiative will be carried forward into the updated mitigation strategy.
Rockaway Twp 2: Analysis/evaluation of Rockaway River (flooding options)	No Progress	This multi-jurisdictional project remains unfunded to date. The Township Engineering Department is still pursuing this project. This initiative will be carried forward into the updated mitigation strategy.
Rockaway Twp 3: Building code update	Continuous	Code amendment and updates are part of basic municipal operations and is continuous. This initiative will be incorporated as an integration action item and will not be carried forward into the updated mitigation strategy.
Rockaway Twp 4: Storm water runoff system upgrade- Route 46 and George Street	In Progress	This project is 10% complete. No further funding is available at this time. This is a multi-jurisdictional project. The Township is still pursuing this project. This initiative will be carried forward into the updated mitigation strategy.
Rockaway Twp 5: Storm water runoff system upgrade-Green Pond Road	Complete	This initiative has been completed and will not be carried forward into the updated mitigation strategy.
Rockaway Twp 6: Storm water runoff systems upgrade Swede Mine Road	In Progress	This project is 5% complete. No further funding is available at this time. The Township is still pursuing this project. This initiative will be carried forward into the updated mitigation strategy.
Rockaway Twp 7: Acquisition/elevation of two flood prone properties located on Debbie Place	No Progress	No funding has been secured for this project at this time. The project is still viable for the Township. This initiative will be carried forward into the updated mitigation strategy.
Rockaway Twp 8: Develop all-hazards public education and outreach program for hazard mitigation and preparedness.	Continuous	The Township and County are working together to establish a program. This initiative will be incorporated as an integration action item and will not be carried forward into the updated mitigation strategy.

Completed Mitigation Initiatives not Identified in the Previous Mitigation Strategy

The municipality has identified the following mitigation projects/activities that have also been completed but were not identified in the previous mitigation strategy in the 2010 Plan:

- Rockaway Twp 5: The upgrades to the storm water runoff system on Green Pond Road were completed.



- Split Rock Dam Improvements: Jersey City Municipal Utilities Authority completed dam rehabilitation of the Split Rock Dam during this planning process. The work was required by NJDEP Dam Safety and the total project cost was \$3.5 million.

Proposed Hazard Mitigation Initiatives for the Plan Update

The Township of Rockaway participated in a mitigation action workshop in October 2014 and was provided the following FEMA publications to use as a resource as part of their comprehensive review of all possible activities and mitigation measures to address their hazards: FEMA 551 ‘Selecting Appropriate Mitigation Measures for Floodprone Structures’ (March 2007) and FEMA ‘Mitigation Ideas – A Resource for Reducing Risk to Natural Hazards’ (January 2013). In January 2015, the Township of Rockaway participated in a second workshop and was provided the results to the risk assessment to further assist with the identification of mitigation actions.

Table 9.36-12 summarizes the comprehensive-range of specific mitigation initiatives the Township of Rockaway would like to pursue in the future to reduce the effects of hazards. Some of these initiatives may be previous actions carried forward for this plan update. These initiatives are dependent upon available funding (grants and local match availability) and may be modified or omitted at any time based on the occurrence of new hazard events and changes in municipal priorities. Both the four FEMA mitigation action categories and the six CRS mitigation action categories are listed in the table below to further demonstrate the wide-range of activities and mitigation measures selected.

As discussed in Section 6, 14 evaluation/prioritization criteria are used to complete the prioritization of mitigation initiatives. For each new mitigation action, a numeric rank is assigned (-1, 0, or 1) for each of the 14 evaluation criteria to assist with prioritizing your actions as ‘High’, ‘Medium’, or ‘Low.’ The table below summarizes the evaluation of each mitigation initiative, listed by Action Number.

Table 9.36-13 provides a summary of the prioritization of all proposed mitigation initiatives for the Plan update.



Table 9.36-12. Proposed Hazard Mitigation Initiatives

Initiative	Mitigation Initiative	Applies to New and/or Existing Structures*	Hazard(s) Mitigated	Goals Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority	Mitigation Category	CRS Category
LOI Project #1155	Sewer pump station emergency generator	Existing	Hurricane, Nor'Easter, Severe Storm, Severe Winter Storm, Earthquake	3, 4	Department of Public Works	High	\$180,000	FEMA HMGP, Township budget for local match	Medium	High	SIP	PP
LOI Project #1152	Emergency generator at 19 Mount Hope Road	Existing	Hurricane, Nor'Easter, Severe Storm, Severe Winter Storm, Earthquake	3, 4	Emergency Management	High	\$60,000	FEMA HMGP, Township budget for local match	Short	High	SIP	PP
RT 1	Backup power (generator) for School Facilities (shelter)(6)	Existing	Hurricane, Nor'Easter, Severe Storm, Severe Winter Storm, Earthquake	3, 4	Rockaway Township Board of Education	High	\$600,000	FEMA HMGP, Township Budget for local match	Short	High	SIP	PP
RT 2	Analysis/evaluation of Rockaway River (flooding options, multi-jurisdictional)	N/A	Flood	4	County Planning and Public Works, Engineering Department	Medium	\$5,000,000+	NJDEP, Army Corps of Engineers	DOF	Medium	NSP	NR, PP
RT 3	Storm water runoff system upgrade-Route 46 and George Street	Existing	Flood	4	Engineering, Department of Public Works, NJDOT, Dover	High	\$1,500,000	FMA, PDM-C, and HMGP if available	DOF	High	SIP	PP
RT 4	Storm water runoff systems upgrade Swede Mine Road	Existing	Flood	4	Engineering, Department of Public Works	High	\$750,000	FMA, PDM-C, and HMGP if available	DOF	High	SIP	PP
RT 5	Acquisition/elevation of two flood prone properties located on Debbie Place	Existing	Flood	4	Engineering, Department of Public Works	Medium	\$800,000	FMA, PDM-C, and HMGP if available	DOF	Medium	SIP	PP
RT 6	Mine Subsidence Project	N/A	Subsidence/ Sinkhole	2,3,4	Department of Public Works	High	\$300,000	PDM-C, and HMGP if available	DOF	Medium	SIP	PP
RT 7	Municipal Dam repair/ reconstruction	Existing	Dam Failure, Flooding	3,4	Department of Public Works	High	\$3,000,000	FMA, PDM-C, and	DOF	Medium	SIP	PP



Table 9.36-12. Proposed Hazard Mitigation Initiatives

Initiative	Mitigation Initiative	Applies to New and/or Existing Structures*	Hazard(s) Mitigated	Goals Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority	Mitigation Category	CRS Category
								HMGP if available				

Notes:

Not all acronyms and abbreviations defined below are included in the table.

*Does this mitigation initiative reduce the effects of hazards on new and/or existing buildings and/or infrastructure? Not applicable (N/A) is inserted if this does not apply.

Acronyms and Abbreviations:

CAV	Community Assistance Visit
CRS	Community Rating System
DPW	Department of Public Works
FEMA	Federal Emergency Management Agency
FPA	Floodplain Administrator
HMA	Hazard Mitigation Assistance
N/A	Not applicable
NFIP	National Flood Insurance Program
NJDEP	New Jersey Department of Environmental Protection
NJOEM	New Jersey Office of Emergency Management
OEM	Office of Emergency Management

Potential FEMA HMA Funding Sources:

FMA	Flood Mitigation Assistance Grant Program
HMGP	Hazard Mitigation Grant Program
PDM	Pre-Disaster Mitigation Grant Program
RFC	Repetitive Flood Claims Grant Program (discontinued 2015)
SRL	Severe Repetitive Loss Grant Program (discontinued 2015)

Timeline:

Short	1 to 5 years
Long Term	5 years or greater
OG	On-going program
DOF	Depending on funding

Costs:

Where actual project costs have been reasonably estimated:

Low	< \$10,000
Medium	\$10,000 to \$100,000
High	> \$100,000

Where actual project costs cannot reasonably be established at this time:

Low	Possible to fund under existing budget. Project is part of, or can be part of an existing on-going program.
Medium	Could budget for under existing work plan, but would require a reapportionment of the budget or a budget amendment, or the cost of the project would have to be spread over multiple years.
High	Would require an increase in revenue via an alternative source (i.e., bonds, grants, fee increases) to implement. Existing funding levels are not adequate to cover the costs of the proposed project.

Benefits:

Where possible, an estimate of project benefits (per FEMA's benefit calculation methodology) has been evaluated against the project costs, and is presented as:

Low=	< \$10,000
Medium	\$10,000 to \$100,000
High	> \$100,000

Where numerical project benefits cannot reasonably be established at this time:

Low	Long-term benefits of the project are difficult to quantify in the short term.
Medium	Project will have a long-term impact on the reduction of risk exposure to life and property, or project will provide an immediate reduction in the risk exposure to property.
High	Project will have an immediate impact on the reduction of risk exposure to life and property.



Mitigation Category:

- *Local Plans and Regulations (LPR)* – These actions include government authorities, policies or codes that influence the way land and buildings are being developed and built.
- *Structure and Infrastructure Project (SIP)*- These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure. This type of action also involves projects to construct manmade structures to reduce the impact of hazards.
- *Natural Systems Protection (NSP)* – These are actions that minimize damage and losses, and also preserve or restore the functions of natural systems.
- *Education and Awareness Programs (EAP)* – These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs, such as StormReady and Firewise Communities

CRS Category:

- *Preventative Measures (PR)* - Government, administrative or regulatory actions, or processes that influence the way land and buildings are developed and built. Examples include planning and zoning, floodplain local laws, capital improvement programs, open space preservation, and storm water management regulations.
- *Property Protection (PP)* - These actions include public activities to reduce hazard losses or actions that involve (1) modification of existing buildings or structures to protect them from a hazard or (2) removal of the structures from the hazard area. Examples include acquisition, elevation, relocation, structural retrofits, storm shutters, and shatter-resistant glass.
- *Public Information (PI)* - Actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. Such actions include outreach projects, real estate disclosure, hazard information centers, and educational programs for school-age children and adults.
- *Natural Resource Protection (NR)* - Actions that minimize hazard loss and also preserve or restore the functions of natural systems. These actions include sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.
- *Structural Flood Control Projects (SP)* - Actions that involve the construction of structures to reduce the impact of a hazard. Such structures include dams, setback levees, floodwalls, retaining walls, and safe rooms.
- *Emergency Services (ES)* - Actions that protect people and property during and immediately following a disaster or hazard event. Services include warning systems, emergency response services, and the protection of essential facilities



Table 9.36-13. Summary of Prioritization of Actions

Mitigation Action/Project Number	Mitigation Action/Initiative	Life Safety	Property Protection	Cost-Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community Objectives	Total	High / Medium / Low
LOI Project #1155	Sewer pump station emergency generator	1	0	1	1	1	1	0	1	1	1	1	1	0	1	11	High
LOI Project #1152	Emergency generator at 19 Mount Hope Road	1	0	1	1	1	1	0	1	1	1	1	1	0	1	11	High
RT 1	Backup power (generator) for School Facilities (shelter)(6)	1	0	1	1	1	1	0	1	1	1	1	1	0	1	11	High
RT 2	Analysis/evaluation of Rockaway River (flooding options)	1	1	1	1	1	0	1	1	0	0	1	1	0	0	10	Medium
RT 3	Storm water runoff system upgrade- Route 46 and George Street	1	1	1	1	1	0	0	1	0	1	1	1	1	1	11	High
RT 4	Storm water runoff systems upgrade Swede Mine Road	1	1	1	1	1	0	0	1	0	1	1	1	1	1	11	High
RT 5	Acquisition/elevation of two flood prone properties located on Debbie Place	1	1	1	1	1	0	0	1	0	1	1	1	1	1	11	Medium
RT 6	Mine Subsidence Project	1	1	1	1	0	0	0	1	0	1	0	1	0	0	7	Medium
RT 7	Municipal Dam repair/reconstruction	1	1	1	0	0	0	1	1	0	1	1	1	0	0	8	Medium

Note: Refer to Section 6 which contains the guidance on conducting the prioritization of mitigation actions.



9.36.7 Future Needs To Better Understand Risk/Vulnerability

None at this time.

9.36.8 Hazard Area Extent and Location

Hazard area extent and location maps have been generated for the Township of Rockaway that illustrate the probable areas impacted within the municipality. These maps are based on the best available data at the time of the preparation of this plan, and are considered to be adequate for planning purposes. Maps have only been generated for those hazards that can be clearly identified using mapping techniques and technologies, and for which the Township of Rockaway has significant exposure. These maps are illustrated in the hazard profiles within Section 5.4, Volume I of this Plan.

9.36.9 Additional Comments

None at this time.



Figure 9.36-1. Township of Rockaway Hazard Area Extent and Location Map 1

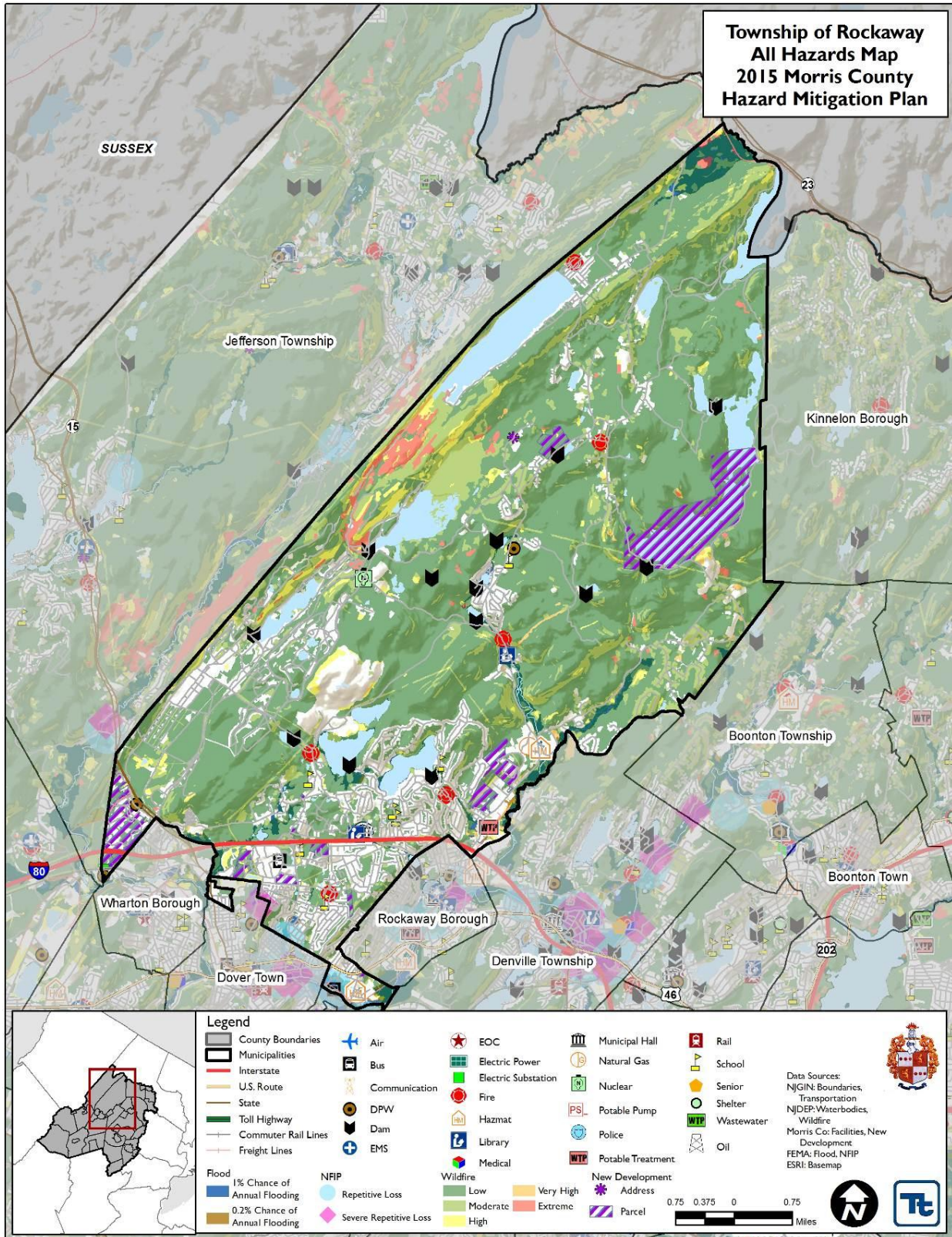
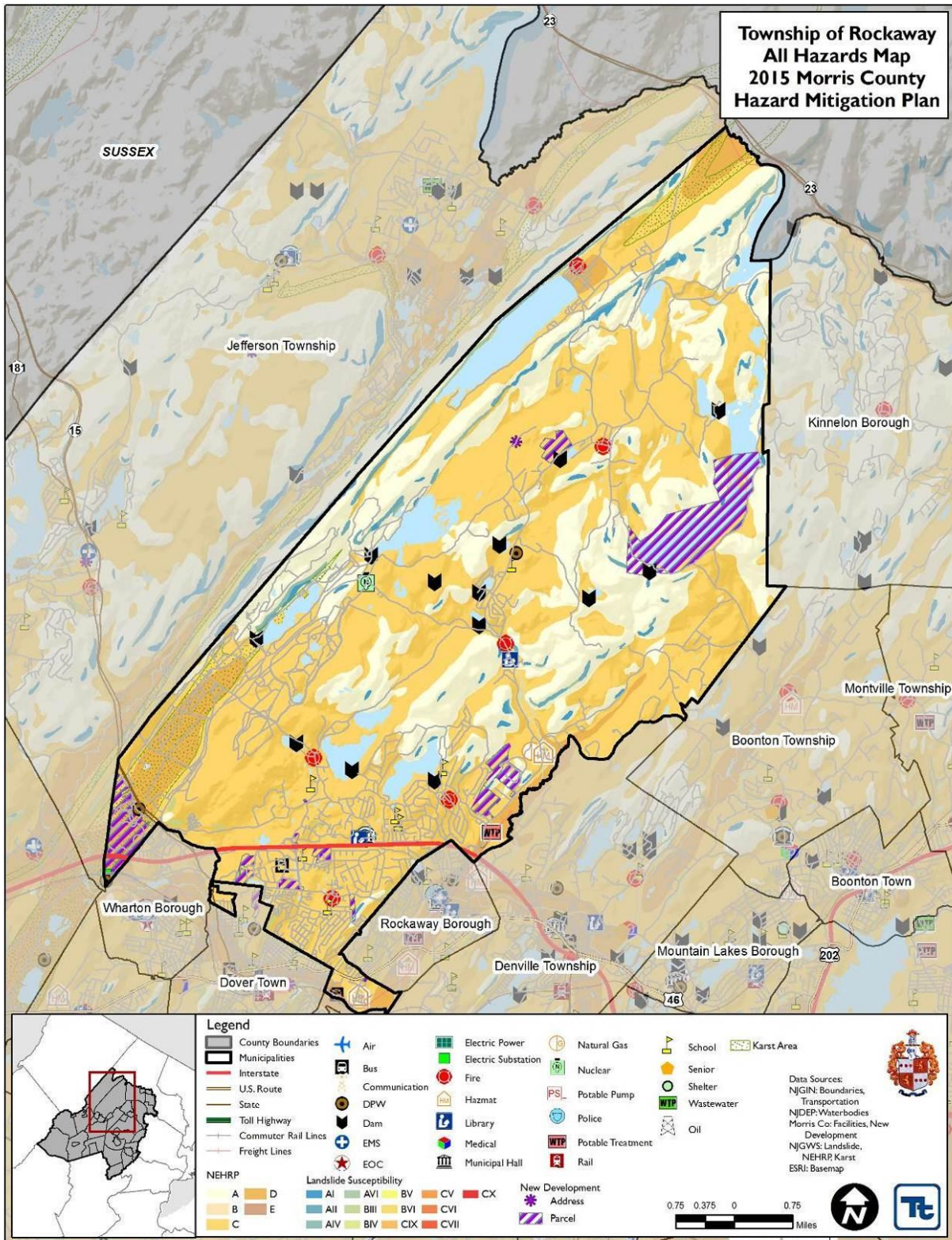




Figure 9.36-2. Township of Rockaway Hazard Area Extent and Location Map 2





Name of Jurisdiction: Rockaway Township
Action Number: LOI Project 1152
Mitigation Action/Initiative: Emergency generator at 19 Mount Hope Road

Assessing the Risk	
Hazard(s) addressed:	Hurricane, Nor'Easter, Severe Storm, Severe Winter Storm, Earthquake
Specific problem being mitigated:	Facility is currently prone to power outages resulting in a disruption of service and none use of fueling system for vehicles.
Evaluation of Potential Actions/Projects	
Actions/Projects Considered (name of project and reason for not selecting):	Portable/mobile generator for result will cause reduction in response time or no response depending upon conditions and time frame. Additionally, provides for electrical hazard to personnel with connections in adverse weather. If road closure is present no access will prevent getting power to facility
Action/Project Intended for Implementation	
Description of Selected Action/Project	Installation of independent natural gas emergency generator at the facility to allowing for operation of vehicle fueling station, facilities ability to become warming station and shelter. Complete with transfer switch and all appurtenances
Action/Project Category	Structure/Infrastructure Projects
Goals/Objectives Met	G-3, G-4
Applies to existing, future, or not applicable	Existing
Benefits (losses avoided)	Installation of an emergency generator, will allow the use of the building to be a warming station, shelter and provide power to township vehicle fueling system during power outages in all weather conditions
Estimated Cost	\$60,000
Priority*	High
Plan for Implementation	
Responsible Organization	Rockaway Township
Local Planning Mechanism	Capital Budget Funding
Potential Funding Sources	FEMA HMGP, Township for local budget match
Timeline for Completion	Short
Reporting on Progress	
Date of Status Report/ Report of Progress	February 9th, 2015 95% of engineering design and finalization of bid documents are completed. Waiting full funding to go to bid.

* Refer to results of Prioritization (page 2)

**Name of Jurisdiction:** Rockaway Township**Action Number:** LOI Project 1152**Mitigation Action/Initiative:** Emergency generator at 19 Mount Hope Road

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Will provide for ensured continuity of services which affects the safety of the residents of the Township
Property Protection	0	
Cost-Effectiveness	1	Maintenance and community continuity surpass the initial high cost of this project
Technical	1	Technically feasible in regards to regular maintenance. Serves as a long term solution with regular maintenance.
Political	1	Political support for this project exists to ensure continuity of operations.
Legal	1	Municipality has the authority to implement action
Fiscal	0	
Environmental	1	Installation complies with environmental regulations
Social	1	Project will benefit the entire population of Rockaway Township
Administrative	1	The Township has the personnel and administrative ability to implement and maintain the project.
Multi-Hazard	1	Project addresses multiple hazards
Timeline	1	Project will take less than 5 years to complete
Agency Champion	0	
Other Community Objectives	1	Provides continuity of operations for a vital facility and continued municipal functioning during times of disaster
Total	11	
Priority (High/Med/Low)	High	



Name of Jurisdiction: Rockaway Township
Action Number: LOI Project 1155
Mitigation Action/Initiative: Sewer Pump Station Emergency Generator

Assessing the Risk	
Hazard(s) addressed:	Hurricane, Nor'Easter, Severe Storm, Severe Winter Storm, Earthquake
Specific problem being mitigated:	The Sewer Pump Station is currently prone to power outages resulting in a disruption of service resulting in over flows of sewage and un-sanitary conditions.
Evaluation of Potential Actions/Projects	
Actions/Projects Considered (name of project and reason for not selecting):	1. Portable generators, not selected for result will cause reduction in response time causing overflows and no accessibility. Additionally, provides for electrical hazard to personnel with connections in adverse weather. If road closure is present no access will prevent getting power to stations
Action/Project Intended for Implementation	
Description of Selected Action/Project	Installation of three (3) independent diesel operated emergency generators at three (3) sewage pumping stations, which are currently prone to loss of power with limited access. Complete with transfer switch and all appurtenances
Action/Project Category	Structure/Infrastructure Projects
Goals/Objectives Met	G-3, G-4
Applies to existing, future, or not applicable	Existing
Benefits (losses avoided)	Emergency generator(s) will provide power to maintain station operations and prevent raw sewage overflows and back-ups.
Estimated Cost	\$180,000
Priority*	High
Plan for Implementation	
Responsible Organization	Rockaway Township
Local Planning Mechanism	Capital Budget Funding
Potential Funding Sources	FEMA HMGP, Township for local budget match
Timeline for Completion	Short
Reporting on Progress	
Date of Status Report/ Report of Progress	February 9th, 2015 95% of engineering design and finalization of bid documents are completed. Waiting full funding to go to bid.

* Refer to results of Prioritization (page 2)

**Name of Jurisdiction:** Rockaway Township**Action Number:** LOI Project 1155**Mitigation Action/Initiative:** Sewer Pump Station Emergency Generator

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Will provide for ensured continuity of services which affects the safety of the residents of the Township
Property Protection	0	
Cost-Effectiveness	1	Maintenance and community continuity surpass the initial high cost of this project
Technical	1	Technically feasible in regards to regular maintenance. Serves as a long term solution with regular maintenance.
Political	1	Political support for this project exists to ensure continuity of operations.
Legal	1	Municipality has the authority to implement action
Fiscal	0	
Environmental	1	Installation complies with environmental regulations
Social	1	Project will benefit the entire population of Rockaway Township
Administrative	1	The Township has the personnel and administrative ability to implement and maintain the project.
Multi-Hazard	1	Project addresses multiple hazards
Timeline	1	Project will take less than 5 years to complete
Agency Champion	0	
Other Community Objectives	1	Provides continuity of operations for a vital municipal facility and continued municipal functioning during times of disaster
Total	11	
Priority (High/Med/Low)	High	



Name of Jurisdiction: Rockaway Township
Action Number: RT-1
Mitigation Action/Initiative: Backup generators at school facilities

Assessing the Risk	
Hazard(s) addressed:	All
Specific problem being mitigated:	Loss of power to schools in the Township that are used as emergency shelters. Without power, the shelters cannot be used.
Evaluation of Potential Actions/Projects	
Actions/Projects Considered (name of project and reason for not selecting):	1. No Action – current problem continues
	2. Purchase portable generators to use at each school
	3. No other feasible options were identified
Action/Project Intended for Implementation	
Description of Selected Action/Project	Establish permanent backup power at schools used by the Township as emergency shelters
Action/Project Category	SIP
Goals/Objectives Met	3, 4
Applies to existing, future, or not applicable	Existing
Benefits (losses avoided)	High
Estimated Cost	High
Priority*	High
Plan for Implementation	
Responsible Organization	Township Board of Education
Local Planning Mechanism	Emergency Management, School Budget
Potential Funding Sources	FEMA HMGP, Township Budget for local match
Timeline for Completion	Short Term
Reporting on Progress	
Date of Status Report/ Report of Progress	Date: Progress on Action/Project:

* Refer to results of Prioritization (page 2)



Name of Jurisdiction: Rockaway Township

Action Number: RT-1

Mitigation Action/Initiative: Backup generators at school facilities

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Provide a place of shelter for residents during times of emergency
Property Protection	0	
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	1	
Fiscal	0	
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	All hazards that have the potential to cause power outages
Timeline	1	
Agency Champion	0	
Other Community Objectives	1	
Total	11	
Priority (High/Med/Low)	High	



Name of Jurisdiction: Rockaway Township
Action Number: RT-3
Mitigation Action/Initiative: Storm water runoff system upgrade- Route 46 and George Street

Assessing the Risk	
Hazard(s) addressed:	Flood
Specific problem being mitigated:	Localized flooding due to inadequate storm drainage along a portion of Route 46
Evaluation of Potential Actions/Projects	
Actions/Projects Considered (name of project and reason for not selecting):	1. Upgrade stormwater runoff system at Route 46 and George Street
	2. Do nothing – current problem continues
	3. No other feasible options were identified
Action/Project Intended for Implementation	
Description of Selected Action/Project	Storm drainage system analysis and upgrade-Route 46, George Street and Lee Avenue due to localized flooding along a portion of Route 46. This is a large scale multi-jurisdictional project between NJDOT, Rockaway Township and possibly Town of Dover.
Action/Project Category	Structure/Infrastructure Project
Goals/Objectives Met	G-4
Applies to existing, future, or not applicable	Existing
Benefits (losses avoided)	High
Estimated Cost	\$1,500,000
Priority*	High
Plan for Implementation	
Responsible Organization	Engineering, Department of Public Works, NJDOT, Dover
Local Planning Mechanism	TBD
Potential Funding Sources	FMA, PDM-C, and HMGP if available
Timeline for Completion	DOF
Reporting on Progress	
Date of Status Report/ Report of Progress	Date: Progress on Action/Project:

* Refer to results of Prioritization (page 2)



Name of Jurisdiction: Rockaway Township

Action Number: RT-3

Mitigation Action/Initiative: Storm water runoff system upgrade- Route 46 and George Street

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Protect residents from being impacted by flooding in this area of the Township
Property Protection	1	Protect surrounding properties from flood damages
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	0	
Fiscal	0	
Environmental	1	
Social	0	
Administrative	1	
Multi-Hazard	1	All hazards that cause flooding
Timeline	1	
Agency Champion	1	
Other Community Objectives	1	
Total	11	
Priority (High/Med/Low)	High	



Name of Jurisdiction: Rockaway Township
Action Number: RT-4
Mitigation Action/Initiative: Storm water runoff system upgrade- Swede Mine Road

Assessing the Risk	
Hazard(s) addressed:	Flood
Specific problem being mitigated:	Inadequate stormwater runoff system
Evaluation of Potential Actions/Projects	
Actions/Projects Considered (name of project and reason for not selecting):	1. Upgrade stormwater runoff system at Swede Mine Road
	2. Do nothing – current problem continues
	3. No other feasible options were identified
Action/Project Intended for Implementation	
Description of Selected Action/Project	Storm drainage system analysis and extension due to localized flooding at a low point on Swede Mine Road. This low point contains a drywell drainage basin which cannot handle high intensity rainfall events. Improvements may require easements and NJDEP permitting.
Action/Project Category	Structure/Infrastructure Project
Goals/Objectives Met	G-4
Applies to existing, future, or not applicable	Existing
Benefits (losses avoided)	High
Estimated Cost	\$750,000
Priority*	High
Plan for Implementation	
Responsible Organization	Engineering, DPW
Local Planning Mechanism	Hazard Mitigation
Potential Funding Sources	FMA, PDM-C, and HMGP if available
Timeline for Completion	DOF
Reporting on Progress	
Date of Status Report/ Report of Progress	Date: Progress on Action/Project:

* Refer to results of Prioritization (page 2)



Name of Jurisdiction: Rockaway Township

Action Number: RT-4

Mitigation Action/Initiative: Storm water runoff system upgrade- Swede Mine Road

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Protect residents from being impacted by flooding in this area of the Township
Property Protection	1	Protect surrounding properties from flood damages
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	0	
Fiscal	0	
Environmental	1	
Social	0	
Administrative	1	
Multi-Hazard	1	All hazards that cause flooding
Timeline	1	
Agency Champion	1	
Other Community Objectives	1	
Total	11	
Priority (High/Med/Low)	High	



Name of Jurisdiction:	Rockaway Township
Action Number:	RT-5
Mitigation Action/Initiative:	Acquisition/elevation of two flood prone properties located on Debbie Place

Assessing the Risk	
Hazard(s) addressed:	Flood
Specific problem being mitigated:	Several properties on Debbie Place are frequently flooded during flooding events.
Evaluation of Potential Actions/Projects	
Actions/Projects Considered (name of project and reason for not selecting):	1. Acquire or elevate properties on Debbie Place 2. Do nothing – current problem continues 3. No other feasible options were identified
Action/Project Intended for Implementation	
Description of Selected Action/Project	Ongoing maintenance issue from a stream that discharges into an open grate channel. Possible elevation improvements needed to gain additional freeboard. Further studies need to be completed.
Action/Project Category	Structure/Infrastructure Project
Goals/Objectives Met	G-4
Applies to existing, future, or not applicable	Existing
Benefits (losses avoided)	Medium
Estimated Cost	High - \$800,000
Priority*	Medium
Plan for Implementation	
Responsible Organization	Engineering, DPW
Local Planning Mechanism	Hazard Mitigation
Potential Funding Sources	FMA, PDM-C, and HMGP if available
Timeline for Completion	DOF
Reporting on Progress	
Date of Status Report/ Report of Progress	Date: Progress on Action/Project:

* Refer to results of Prioritization (page 2)



Name of Jurisdiction: Rockaway Township
Action Number: RT-5
Mitigation Action/Initiative: Acquisition/elevation of two flood prone properties located on Debbie Place

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Protect the residents from future flood damages
Property Protection	1	Protect the structures from future flood damages
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	0	
Fiscal	0	
Environmental	1	If acquired, would provide open space in the Township
Social	0	
Administrative	1	
Multi-Hazard	1	
Timeline	1	
Agency Champion	1	
Other Community Objectives	1	
Total	11	
Priority (High/Med/Low)	Medium	



Name of Jurisdiction: Rockaway Township
Action Number: RT-6
Mitigation Action/Initiative: Mine Subsidence Project

Assessing the Risk	
Hazard(s) addressed:	Land Failure
Specific problem being mitigated:	Mine-related subsidence
Evaluation of Potential Actions/Projects	
Actions/Projects Considered (name of project and reason for not selecting):	None identified – monitoring and situation remediation is the primary mitigation action associated with this hazard
Action/Project Intended for Implementation	
Description of Selected Action/Project	Rockaway Township continues to investigate and monitor any reported subsidence in the municipality to determine if it is abandoned mine related. In the past, Rockaway Township has had to remediate and/or fence off mine subsidence in roadways or on Township property and is prepared to continue such actions as needed. On-going hazard.
Action/Project Category	SIP
Goals/Objectives Met	2, 3, 4
Applies to existing, future, or not applicable	N/A
Benefits (losses avoided)	High
Estimated Cost	High - \$300,000
Priority*	Medium
Plan for Implementation	
Responsible Organization	DPW
Local Planning Mechanism	Hazard Mitigation
Potential Funding Sources	PDM-C, and HMGP if available
Timeline for Completion	DOF
Reporting on Progress	
Date of Status Report/ Report of Progress	Date: Progress on Action/Project:

* Refer to results of Prioritization (page 2)



Name of Jurisdiction: Rockaway Township
Action Number: RT-6
Mitigation Action/Initiative: Mine Subsidence Project

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Protect residents from future mine subsidence issues within the Township
Property Protection	1	Protect properties from any damages caused by mine subsidence within the Township
Cost-Effectiveness	1	
Technical	1	
Political	0	
Legal	0	
Fiscal	0	
Environmental	1	
Social	0	
Administrative	1	The DPW will conduct the work for this project
Multi-Hazard	0	
Timeline	1	This is an ongoing project
Agency Champion	0	
Other Community Objectives	0	
Total	7	
Priority (High/Med/Low)	Medium	



Name of Jurisdiction: Rockaway Township
Action Number: RT-7
Mitigation Action/Initiative: Municipal Dam repair/reconstruction

Assessing the Risk	
Hazard(s) addressed:	Dam Failure, Flooding
Specific problem being mitigated:	Dam failure due to aging infrastructure of current dams
Evaluation of Potential Actions/Projects	
Actions/Projects Considered (name of project and reason for not selecting):	No alternates considered – repair, removal, or rehabilitation are the only available options
Action/Project Intended for Implementation	
Description of Selected Action/Project	Rockaway Township owns four (4) dams being Lake Hudsonia Dam, Lake Ames Dam, Mt. Hope Pond Dam and Egberts Lake Dam. These dams are under the purview of NJDEP Dam Safety. The Township will repair, rehabilitate or remove pending approvals and funding. Project is currently in progress and 15-20% completed. The Township needs to secure additional funding and needs approval from the state.
Action/Project Category	SIP
Goals/Objectives Met	3, 4
Applies to existing, future, or not applicable	Existing
Benefits (losses avoided)	High
Estimated Cost	\$3,000,000
Priority*	Medium
Plan for Implementation	
Responsible Organization	DPW
Local Planning Mechanism	Emergency Management
Potential Funding Sources	FMA, PDM-C, and HMGP if available
Timeline for Completion	DOF
Reporting on Progress	
Date of Status Report/ Report of Progress	Date: Progress on Action/Project:

* Refer to results of Prioritization (page 2)



Name of Jurisdiction: Rockaway Township

Action Number: RT-7

Mitigation Action/Initiative: Municipal Dam repair/reconstruction

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Protect residents from dam failure events; prevent flooding of roadways that are essential for emergency personnel
Property Protection	1	Protect properties from dam failure damage
Cost-Effectiveness	1	
Technical	0	
Political	0	
Legal	0	
Fiscal	1	
Environmental	1	
Social	0	
Administrative	1	
Multi-Hazard	1	Flood and Dam Failure
Timeline	1	
Agency Champion	0	
Other Community Objectives	0	
Total	8	
Priority (High/Med/Low)	Medium	